WHAT IS CLAIMED IS:

1. A process of preparing a nitrided valve metal comprising nitriding a valve metal powder at a sufficient temperature and pressure during a heat treatment that is prior to a deoxidation step.

2. The process of claim 1, wherein said nitriding begins at average valve metal temperature of about 200° to about 350° C.

3. The process of claim 1, wherein said nitriding occurs prior to a sintering phase of the heat treatment of the valve metal.

4. The process of claim 1, wherein said nitriding occurs after a sintering phase of the heat treatment of the valve metal.

5. The process of claim 1, wherein said nitriding is accomplished with nitrogen gas.

6. The process of claim 1, wherein said nitriding is accomplished with at least one nitrogen-generating compound.

7. The process of claim 1, wherein said nitriding results in said valve metal having a nitrogen content of from about 1,500 ppm to about 4,000 ppm.

8. The process of claim 1, wherein said heat treatment comprises heating the valve metal to a temperature of from about 1250° C to about 1500° C for a period of time of from about 10 minutes to about 2 hours, wherein said valve metal is tantalum.

9. The process of claim 1, wherein said nitriding occurs at a temperature of from about 250° C to about 600° C.

10. The process of claim 1, wherein prior to said nitriding, said valve metal is hydrogen degassed.

11. The process of claim 1, wherein said nitrided valve metal, after nitriding, is subjected to at least one passivation step, at least one deoxidation step, and at least one sintering step.

12. The process of claim 1, wherein said valve metal is tantalum.

13. The process of claim 1, wherein said valve metal is niobium.

14. The process of claim 2, wherein the average valve metal temperature is increased at a rate of less than 10° C per minute until nitriding is complete.

15. A nitrided valve metal having a nitrogen content of from about 1,500 ppm to about 4,000 ppm wherein said nitrided valve metal powder comprises pore sizes of at least 2 microns.

16. The nitrided valve metal of claim 15, wherein said valve metal is tantalum.

17. The nitrided valve metal of claim 15, wherein said valve metal is niobium.

18. A nitrided tantalum powder having a nitrogen content of from about 1,500 ppm to about 4,000 ppm and a capacitance, when formed into a capacitor anode at 30 volts, of from about 40,000 CV/g to about 80,000 CV/g.

19. A nitrided tantalum powder having a flow of from about 70 to about 300 mg/s.

20. A nitrided tantalum powder having a capacitance of from about 40,000 CV/g to about 80,000 CV/g and having a Scott Density of from about 25 to about 40 g/in^3.

21. A capacitor anode comprising the tantalum powder of claim 16.

22. A capacitor anode comprising the niobium powder of claim 17.